

MARINE REVIEW.

VOL. VII.

CLEVELAND, O., AND CHICAGO, ILL., JANUARY 26, 1893.

No. 4.

Canadian Turtle Deck Steamer.

The drawing herewith shows a new style of turtle deck steamer designed by W. Power, Kingston, Ont., for lake carrying trade. The only departure from the whaleback or monitor style is the flat, tumble-home, which is increased in width, beginning at the lower load water line. It is possible that a steamer may be built after this plan by one of the Canadian forwarding companies. Mr. Power has had an extended experience in designing and constructing in both Canada and the United States, and has been connected with some of the best shipbuilding concerns. Several of his designs have received awards at national expositions. He does not claim large carrying capacity for the vessel here shown, but, of course, the design might be altered so as to give increased capacity.

Ore Sales Market—Lake Freight Matters.

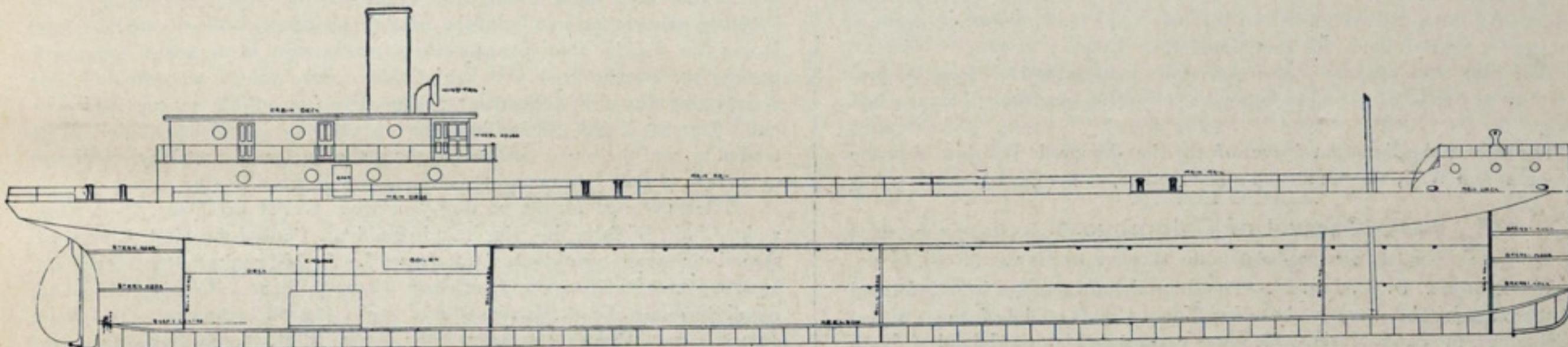
The most important factor in the question of prices on Lake Superior iron ores for 1893 is the position of the lake vessel owner. Again he is master of the situation, to the extent that if sales were to be made at this time he would be warranted in refusing to tie up his tonnage in contracts at rates any lower than those of a year ago, which were based on \$1.25 from the head of Lake Superior, and which afforded a very fair margin of profit in

with the inability of the railways to move much of it, and the indications of a very late opening of navigation and large supplies of coal to be handled, on account of the severe winter weather, are all conditions favorable to the vessels. Ore dealers realize, accordingly, the force of the vessel owner's claim for freights about equal to those of last year, and they cannot attempt negotiations with furnace men until there is some prospect of better prices than those now talked of. The movement of stocks from Lake Erie docks is very light on account of freezing weather.

Owners who have tonnage in Chicago and Milwaukee that is not chartered for grain storage are figuring on improvement in the rates. There are no definite figures as to the amount of tonnage loaded or placed to load in Chicago during the coming month, but estimates are in the neighborhood of 6,000,000 bushels. This would leave less than 3,000,000 bushels available storage at that point, and the fact that one boat, the steamer Morley, was chartered on Monday at 4 cents for corn indicates an advancing tendency in the market.

Some Facts About Salvage.

According to "Roscoe's Admiralty Law and Practice," the standard English authority, salvage is "the reward which is earned by those who have voluntarily saved or assisted in saving



CANADIAN TURTLE DECK STEAMER.

1892. It is doubtful if an offer just now on the part of a producer or shipper to take tonnage at \$1.15 or \$1.20 from the head of the lakes would result in anything being covered. Thus the conditions of the past seven years (1891 excepted) are again repeated in the present situation, and although there has been a marked decline in the value of Lake Superior ores during this period, the ship yards continue turning out big freight carriers by the hundred each year, with business at hand for all of them. The time has arrived for contracts covering another season and the vessel owners have the best assurance of a profit in the trade. The effect of new vessels coming on to the market is not referred to with the degree of importance attached to this side of the freight question on the past.

Iron ore shippers can not open up sales without first having at least satisfied themselves as to lake freights, and hence the opinion expressed during the past few days is that sales may be delayed sixty days or more. Opening sales on a few leading ores early last year were about \$4.60 for Norrie, \$4.25 for Chapin, \$4.80 for Chandler and \$4.50 for Aurora and Ashland. Furnace owners who talk of prices around \$4 for these ores will readily see how important the outlook in lake freights is to the ore shippers, who will undoubtedly hold out a long time for developments before submitting to low prices. The enormous stocks of grain in Chicago and Duluth and in farmers' hands, together

a ship or boat, or their apparel or any sort thereof, or the lives of persons at sea, or a ship, cargo, or any part thereof from peril, or a wreck from total loss."

It is a curious fact that the law does not permit any salvage for saving life. This is because, under insurance contracts, a vessel is not held to have deviated from her course when she goes out of it to save life, while if she goes out of it to save property her insurance is forfeited, and compensation must be made for its loss. There is no law upon the statutes requiring the master of a vessel to heed signals of distress. But there are very few instances of masters having disobeyed the unwritten law which says that a call for help at sea must be obeyed. The rule is that salvage service can only be rendered by persons not bound by contract to render it. If part of a crew leave their ship and go to save another, and thereby acquire a right to salvage, those who remain share in the reward, though not equally, for their rights rest mainly on the increased labor or exposure which falls upon them. That the property must be actually saved, and saved by those claiming to be salvors, in order to lay the foundation for salvage claims in admiralty, is well established, but if the party encounters the danger, and does all he can to save the vessel, and his services tend in some degree to preserve her, compensation will be awarded him, although the vessel is mainly preserved by other means.

Buffalo Port Matters.

Special Correspondence to the MARINE REVIEW.

BUFFALO, N. Y., Jan. 26.—The steamer John B. Ketcham—it would be a breach of marine etiquette to call her unlucky—will end her present troubles by being sold this week on a mortgage foreclosure. Craig & Son of Toledo, her builders, take this step because it is at present the only way they can get a title to her, as her nominal owners are not in position to give a title. The sale will not, therefore, develop any very spirited biddings.

Agent John C. Fitzpatrick, who has come down from Cleveland to represent the Cleveland & Buffalo Transit Company, is able to give some reasons for expecting the new line to pay. The State of New York and the State of Ohio—once the City of Mackinac and City of Alpena—will make it easy for passengers to leave either port at night and be in the other for early business hours next day. The fare will be lower than railroad fare. There will be especial provision for excursions to Niagara Falls. A large amount of freight has already been secured. Other night lines, like that between Chicago and Milwaukee, where rail competition is sharp and there is no short cut for the vessel, as there is between Cleveland and Detroit, are making money. Buffalo has been rather skeptical of success in this venture, but it will be as pleased as anybody to see itself disappointed.

Our canal men are a most unprogressive class of people. They have not even cohesive qualities. If one man proposes anything the other twenty proceed to sit on him. Chicago is offering 5 cents on wheat from here to New York, a remarkably good freight, but nobody will take it, even when there is apprehension, and a good reason for it, that if any attempt is made to push up freights above what is freely offered the railroads will take the grain. There is a proposition to buy or build an elevator for exclusive canal use, but it fails of sufficient backing and will probably fall through. Gov. Flower's proposition to use the trolley system for canal towing is not received with great favor here. Most people think his estimate of the cost much too small and fear that the running expenses would be large.

When the vessel owners and underwriters came to a sort of understanding in regard to inspections, the committee of underwriters that had been appointed to formulate a plan for inspecting steel vessels, took a long breath and said they were legislated out of office. They will make no report to the next meeting of the Inland Lloyds.

New appointments: Capt. W. W. Stewart of Port Huron changes from the propeller Dean Richmond to the Samoa; Capt. J. T. Kenny of Buffalo from the W. H. Barnum to the Sam Marshall.

Why hasn't the prophet of the open straits materialized? Here is a January thaw on hand and not a prediction on the spring opening. This is a bad break.

The sale of the Egyptian leaves of the time-honored Widslow fleet the Cormorant and Wall, which must be sold together, or the Cormorant first.

Caravel of Columbus.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., Jan. 26.—The state department has been informed that there has just been received at New York, a large model of the Caravel of Columbus, the Santa Maria, which was constructed on the Island of Santo Domingo, under the personal direction and supervision of Senor Don Andres Gomozy Pintado, the secretary of the Spanish commission for the Madrid exposition. It was designed with great care from original drawings made by that gentleman, who is an enthusiast in such matters, and has paid much attention to ancient naval architecture, and is considered an expert, having made many studies from all the ancient engravings obtainable with this special purpose in view. This model is something more than a toy, being 18 feet in length, 6½ feet beam, having a depth at the stern of 8 feet, and is fully rigged. It was first used in the festivities with which the discovery of America was celebrated in the city of San Domingo, in October last, being carried through the streets of that town in the grand procession that took place, manned by a bevy of little girls as a crew. It was then placed in the river Ozama and sailed to the point of embarkation by the Clyde line for the United States. This reduced replica of the Columbus caravel was constructed at the suggestion of Mr. Frederic A. Ober, the exposition commissioner to the West Indies, and will form part of the Columbian exhibit of the state department at Jackson park.

Testimony in the Case of Col. Ludlow.

Special Correspondence to the MARINE REVIEW.

Washington, D. C., Jan. 26.—Col. Ludlow has been granted leave of absence for two months, and after looking after business matters now demanding his attention in Detroit will go east for a rest. The army court inquiry into his case with the light-house board was finished last week as far as the taking of testimony is concerned, and altogether the case, when investigated, went as badly to pieces as could well be conceived, the only thing left being the assertion that Col. Ludlow and Commander Heyerman had failed to properly present the matter in their communications. There can be no doubt as to the result, notwithstanding the restrictions imposed by the court upon itself, as it is quite competent for the reviewing authorities to take into consideration the facts subsequent, as well as prior to June 21. Under a ruling

of the court in construing the order which convened it, they found themselves limited in the investigation as to matters prior to June 21, the date on which Col. Ludlow was relieved. This caused some embarrassment at the moment, because it prevented the direct introduction of testimony showing that the board itself, when advised of the facts, promptly repudiated the orders made by the executive officers and adopted the recommendations of the district officers in full. Notwithstanding this obstacle, the main facts were brought before the court and there is no doubt as to the result of the investigation as fully vindicating the conduct of the district officers in "failing to comply promptly" with the preposterous orders which they received.

Capt. Mahan went very badly to pieces in giving his testimony on the stand, contradicting himself in several important matters, and especially contradicting Mr. Mendenhall by declaring that nothing else than the St. Mary's river matter had to do with the relief of the district officers. Mr. Mendenhall, it will be remembered, stated in his pamphlet that that had nothing to do with it.

The testimony of Commander Coffin, who wound up with the declaration that "the executive officers are the board," was if anything valuable on Col. Ludlow's side of the case. Mr. Mendenhall refused to testify or allow himself to be examined with regard either to the St. Mary's matter, or any other.

Major Gregory, the former engineer secretary, testified that all the other matters referred to in Mendenhall's paper were never before the board at all, but were fished out for the purpose.

Colonels Elliot and Ernst, members of the board, testified that they had been completely deceived as to the conduct of the district officers by the misrepresentations made June 14 and 16 by the executive officers.

The Shipmasters' Association.

Special Correspondence to the MARINE REVIEW.

PORT HURON, Mich., Jan. 26.—Shipmasters' Association is now the name of the organization of lake vessel masters, formerly known as the Excelsior Marine Benevolent Association and the Shipmasters' Excelsior Marine Benevolent Association. The more simple name will undoubtedly meet with general favor, especially as it has been held by many members that the organization is not in the full meaning of the word a beneficial association, and anyhow the names previously adopted were decidedly cumbersome. One important change in the constitution, made at the meeting of the grand lodge which closed its sessions here on Saturday, was the abolition of the disability clause. It was also decided that hereafter the representation in the grand lodge will be only one delegate from each subordinate lodge, and the subordinate lodges are privileged to choose this one representative from all officers, past and present. A great deal of routine business regarding constitutional affairs was attended to, and the social features of the gathering were especially creditable to citizens of Port Huron and the shipmasters of this vicinity.

Officers elected for the coming year are: Grand president, Capt. Alexander Clark, Buffalo; first vice grand president, Capt. John Hall, Cleveland; second vice grand president, Capt. James Leisk, Milwaukee; treasurer, Capt. Lyman Hunt, Buffalo; grand secretary, Capt. William A. Collier, Cleveland; grand chaplain, Capt. George McCullough, Detroit; grand marshal, Capt. James Hogan, Chicago; grand warden, Capt. B. M. Pierce, Bay City; grand sentinel, Capt. Alex Sinclair, Port Huron.

The grand lodge took notice of the lamentable manner in which some of the brethren were lost during the past season, deeply sympathizing with the widows and fatherless children.

The next annual meeting will be held in Chicago on the third Tuesday in January, 1894.

Location of the St. Clair Canal.

Editor MARINE REVIEW: I have noticed from time to time communications in the papers concerning the location of the St. Clair Flats canal. I have always been under the impression that really the situation of the improvements was in Canadian waters. Quite recently, through a source which is authentic, I was informed that the matter was all cleared up at the time of the settling of the Alabama claims by a diplomatic statement on the part of the English parties to the treaty, the main feature of which set forth that as the United States had constructed and maintained in their territory a ship canal at Sault Ste. Marie, Mich., and at the St. Clair Flats, and had allowed the subjects of Her British Majesty to use the same on the same conditions on which the United States government permitted its subjects to use them, therefore the British government was desirous of reciprocating in some way for such courtesy. This diplomatic and polite method of settling the matter was ratified by the governments of both countries, and in that way the controversy is supposed to be settled.

Yours respectfully,
Sault Ste. Marie, Mich., Jan. 20, 1892.

C. M. P.

The Berlin Iron Bridge Company of East Berlin, Conn., has secured the contract for a new iron fire-proof storehouse for the Pope Manufacturing Company, at Hartford, Conn. The building will be 40 feet wide by 84 feet in length, two stories high. This company erected the buildings mentioned in this issue in the description of the Newport News company.

Iron Mining.

VALUE OF LEADING STOCKS.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	\$100 00	\$ 45 00	\$.....
Champion Iron Company	25 00	.....	35 00
Chandler Iron Company	25 00	40 00	41 00
Jackson Iron Company	25 00	.....	.....
Lake Superior Iron Company	25 00	35 00	.....
Minnesota Iron Company	100 00	67 00	69 00
Pittsburgh & Lake Angeline Iron Co.	25 00	.....	135 00
Republic Iron Company	25 00	10 00	.....
Ashland	25 00	.....	9 00
Section Thirty-three	25 00	.....	4 00
Brotherton	25 00	.....	.....
Iron Belt	25 00	.....	2 00
Aurora	25 00	8 00	9 00

Although the market for iron mining stocks continues dull and uninteresting, investors as well as ore dealers are of the opinion that when the time for sales comes around the furnace men will want a full supply and prices will not vary much from those of last winter. There is a great deal of ore on dock but stock piles at the furnaces will be very much reduced, on account of the inability of railways to move ore during the cold snap of the past few weeks. Among dividends announced is one of \$2 from the Aurora, payable Feb. 28. The dividend of 50 cents a share, declared by the directors of the Republic at their annual meeting, will be paid on the 30th inst., and it is said on very good authority that the Lake Superior Company will pay \$2 shortly. From the Chandler a regular dividend of \$2 is expected on March 1.

As a result of the closing down of the Great Western mine of Crystal Falls, owned by the Star Iron Company of Detroit, the Lincoln mine, which is connected with the Great Western by a drift, will of necessity be also allowed to fill with water.

Stockholders of the Metropolitan Land and Iron Company controlling the Norrie mine met in Milwaukee last week and re-elected all of the old officers of the company.

George H. Green of New York, representing eastern capitalists, is reported to have paid \$75,000 for the Buckeye and Diamond properties, Mesaba range.

Sales of Vessel Property.

Following are some sales of vessel property reported within the past week: Schooner Melvin S. Bacon, E. R. Pelton of Vermillion to J. C. Gilchrist of Vermillion \$15,000; schooner Thomas P. Sheldon, E. B. Hale of Cleveland to J. C. Gilchrist of Vermillion \$15,000; propeller Egyptian, Winslow estate of Cleveland to J. J. Ward of Chicago \$48,000; schooner Celtic, Davidson Transportation Company of West Bay City to G. K. Jackson of same place \$35,000; steamer T. D. Stimson, Simeon Cable of Chicago to James T. Mathews of Detroit \$20,000; same boat, James T. Mathews of Detroit to J. Lonsby & Son of Mt. Clemens \$27,500; steamer Nyack, Union Steamboat Company of Buffalo to Capt. R. F. Parsons of Buffalo, \$40,000; schooner B. W. Parker, State Transportation Company of Detroit to Pridgeon Navigation Company \$68,000; ferry boat Sapho, Walker-ville and Detroit Ferry Company to Detroit, Belle Isle and Windsor Ferry Company of Detroit \$20,000. The schooner Celtic, purchased from Capt. James Davidson by G. K. Jackson will tow behind the steamer D. Leuty. This is the fourth boat sold by Capt. Davidson within a few weeks. Capt. R. F. Parsons proposes to use the passenger steamer Nyack for world's fair excursions, taking passengers from Buffalo, Detroit, Cleveland and other lake ports to the fair and providing them with quarters aboard the boat while in Chicago. This scheme was suggested in the REVIEW some time ago.

Two Important Meetings.

Two meetings of interest in marine circles are now being held in Washington and Chicago. The supervising inspectors of steam vessels have been in session at the capital for several days past, and at the Sherman house, Chicago, Tuesday, the national association of marine engineers opened its annual meeting. There are no questions of special importance to come before either of these gatherings, although reports of their deliberations, which will be given out in a few days, will undoubtedly prove interesting.

Society of Naval Architects and Marine Engineers.

In a letter thanking THE REVIEW for some suggestions relative to membership from the lakes in the Society of Naval Architects and Marine Engineers, Secretary W. L. Capps of Washington says: "There is now an assured membership of more than 400, and there is every reason to believe that the society is an accomplished success. The majority of those who have applied for membership are men of great prominence in shipbuilding and engineering circles, and the general membership is thoroughly representative and national in character."

At present there is no official headquarters of the society, but it will be incorporated under the laws of the state of New York, with ultimate permanent headquarters in New York city. At present temporary headquarters will be with the secretary in Washington.

The promoters of this organization are anxious that all prominent men connected with shipbuilding and shipping interests of the lakes shall become members, although some may have been overlooked in the distribution of invitations. Societies similar to this exist in England, Scotland, France and other European countries and their influence in the development of naval architecture, marine engineering and allied professions have been felt in a marked degree. The foreign societies include among the officers and members the foremost shipbuilders, engineers, ship owners, naval officers, members of Parliament and other public men interested in shipping. Many laws promoting the greater security of life at sea and the general improvement of ocean carriers were originated by these societies, and the present advanced state of knowledge in naval architecture and marine engineering is directly traceable to their proceedings and investigations. It is therefore believed that the time has come when members of similar professions in this country should organize themselves into a society "for the reading and discussion of appropriate papers and interchange of professional ideas, thus making it possible to combine the results of experience and research on the part of shipbuilders, marine engineers, naval officers, yachtsmen and those skilled in producing the material from which ships are built and equipped."

Kindred institutions such as the American Society of Civil Engineers, Society of Mining Engineers, etc., have been vastly instrumental in developing the natural interior resources of the country, and we now lead the world in our means of interior communication. But, with our vast seacoast and abundance of material from which ships are built, we occupy only the third or fourth place among the great maritime countries of the world. While the formation of a society of this kind must have in view principally the scientific and technical development of shipbuilding, there is no doubt that it will stimulate its actual growth by rousing popular as well as professional interest in a branch of industry which should be one of the most powerful factors in our development as a nation.

Lake Engineers Entitled to Positions on Ocean Steamers.

WASHINGTON, D. C., Jan. 26.—At Monday's meeting of the board of supervising inspectors the following resolution was passed: "That Section 2, Rule 5, be amended by striking out so much of the third paragraph as relates to the promotion of chief engineers of lake, bay and sound steamers to assistant engineers of ocean steamers, and that the following words be substituted under the head of first engineers, Section 2, Rule 5, to read as follows:

"That engineers of lake, bay and sound steamers, who have actually performed the duties of engineers for a period of three years shall be entitled to examination for engineers of ocean steamers; applicant to be examined in the use of salt water, methods employed in regulating the density of the water in boilers, the application of the hydrometer in determining the density of sea water, and the principle of constructing the instrument, and shall be granted such grade as the examining inspectors may find him competent to fill."

Trade Notes.

The American three-masted schooner Cora H. Hansom, American screw steamer Cumberland, British schooner Turban, British three-masted schooner Windermere, and Danish bark Jorgen J. Lotz, were recently classed by the American Shipmasters' Association, New York.

At the Lake Erie Engineering Works, Buffalo, the largest lathe in the world is now engaged in finishing one of the two immense barbettes, or carriages for elevating guns, on two recently constructed government cruisers. These barbettes when finished will be 20 feet in diameter. They are in quarter sections, each weighing twenty tons.

H. G. Trout & Co., Buffalo, N. Y., are building a fore and aft compound engine 21 and 42 inches by 36 inches stroke for the Grand Haven barge Mary A. McGregor, and Johnston Bros., Ferrysburg, Mich., are building a new boiler 12 by 12½ feet for the same boat. She has been chartered by William Loutit, who has a contract for ore from Escanaba to Spring Lake, Mich. She will probably carry 1,000 tons when she comes out as a steam-barge.

The Northern Line Passenger Steamers.

Engravings on the opposite page show deck plans of the two steel twin-screw passenger steamers, building at the ship yard of the Globe Iron Works Company, Cleveland, for the Northern Steamship Company, and intended for fast high-class service between Buffalo and the head of Lake Superior in connection with the Great Northern Railway, recently completed to the Pacific coast. In our issues of Dec. 22 and 29, a detailed description of the hulls, machinery and boilers of these vessels was given, the issue of the latter date containing a supplemental engraving made from a painting of one of them as they will appear in service. The deck plans presented herewith are, however, especially interesting, as they serve to show better than any written description the full detail of deck arrangements.

Against the Ship Canal.

Readers of the REVIEW are acquainted with its position relative to the proposed ship canal from the lakes to the Atlantic seaboard. There is no harm in giving publicity to the views of opponents, and on this account we reproduce here an extract from a paper recently written by Horatio Seymour, Jr., ex-state engineer of New York. It is only necessary to note that Mr. Seymour's position as a public official connected with the New York state canals in the past would make him prejudicial towards the big canal project. His arguments are, however, interesting, as they are in line with the only question on this subject which admits of opposition, that of practicability. He says:

"If this was a parallel case to the Suez canal, or that proposed from the Atlantic to the Pacific, there would be no question as to its expediency, for in those instances there is but a narrow neck of land separating long stretches of ocean navigation, and the delay and hazard of the canal passage is comparatively small. We have different problems to encounter in a ship canal through New York. The first is the cost, the second is the water supply, and the third is whether it would serve its purpose.

"In order to construct a navigable channel in which vessels may move with economy, the depth of water must be at least three feet more than the draft of the boat, and the area of the cross-section six times the cross-section of the submerged portion of the boat. The canal, therefore, should, for ocean vessels, be at least 30 feet deep, and 300 feet wide, with locks 600 feet in length. No estimate has ever been made on a canal of this size, but Elnathan Sweet, Jr., and John D. Van Buren, late state engineers of New York, estimated the cost of a canal extending from Buffalo to deep water in the Hudson, 18 feet deep, 100 feet wide at the bottom, with locks 400 feet long and 60 feet wide, at from \$150,000,000 to \$200,000,000. If the cost of a canal 30 feet deep and 300 feet wide be compared with this estimate by a ratio between the areas of the waterways, the amount would be over four times \$150,000,000 or \$600,000,000. This estimate may seem extreme, but the Erie canal, with a prism 72 feet on top and 52 feet on the bottom, with seven feet of water, cost \$30,000,000 to construct. The Suez canal, 100 miles long, 39 miles only of cutting above surface of water, with 61 miles only through lakes, with no locks and a prism 72 feet on the bottom, with a depth of 26 feet, cost \$100,000,000. The Panama canal, 50 miles long, with no locks was estimated to cost \$150,000,000. The proposed ship canal would be 345 miles in length, and with 30 locks and a large number of costly aqueducts. That this great sum might be expended for the country is not to be measured in its needs, but the water supply and its control are subjects that require even more consideration than the cost.

"Mr. Sweet, in his estimate for a ship canal that I have spoken of, estimates 200,000 cubic feet per minute for a canal 100 feet wide at the bottom and 18 feet deep; the canal to float ocean vessels would require much more water than this. The present water supply of the Erie canal can furnish 65,000 cubic

feet per minute, leaving a deficiency even in a canal of only 18 feet in depth, of 135,000 cubic feet per minute. Where is this supply of water to come from? There is no source that I know of except Lake Erie, and, as the water is needed to carry the boats over the level between Syracuse and Utica, the canal would have to be so constructed as to permit a flow of water continuously from one end to the other. To do this the present Erie canal would have to be elevated above the valley at Montezuma, the Jordan level cut down, and the canal carried across the depression at Syracuse, and the bed of the Mohawk River used from Utica to the Hudson. The difficulties that would have to be encountered in carrying such a body of water through the state, with its culverts, aqueducts, bridges, and locks, are very great. I do not say that it cannot be done, but I can safely say that no such work ever has been constructed."

Legal Matters at Detroit.

Following is a report of admiralty proceedings in the United States district court, Detroit, last week, Judge Swan presiding:

Tuesday, Jan. 10 to Saturday, Jan. 14, No. 4058, S. B. Grummond vs. steam barge Isabella J. Boyce, heard and submitted; an action for damages, the Boyce running into the Atlantic last May.

Monday, Jan. 16, No. 3914, Ella Bowers vs. schooner Lone Star, heard and submitted; an action for wages.

Tuesday, Jan. 17, No. 4156, Albert Forest vs. Benjamin Boutell and Peter C. Smith, heard and submitted; an action for breach of contract.

Wednesday, Jan. 18, No. 3975, John Mullerweiss, Jr., vs. pile driver E. O. A., heard and submitted; an action for supplies furnished pile driver.

Thursday, Jan. 19, No. 3936, Capel R. Emory vs. tug Gracie A. Ruelle, heard and decree for libelant for \$20 and costs; an action for dockage, the tug using Emory's dock when idle.

Friday and Saturday, Jan. 20 and 21, No. 4009, Annie Sullivan vs. Gillman Bros. & Barnes. No cause for action, and libel dismissed with costs to libelant; an action for breach of contract, Sullivan claiming that defendants leased the City of New Baltimore to run to their summer resort.

In General.

Wednesday, Feb. 1, is the date fixed for the launching of the Ammen ram at Bath, Me.

An interesting summary of a lecture on "Gauges for Registering High Pressures," delivered by F. Bundenberg before the Lantern Society, London, is printed in the January number of Cassier's Magazine.

"Until evidence of something to the contrary is produced," says the Engineer of London, "we think that Messrs. Russell, Spence & Co., Glasgow, may claim the honor of having invented the modern triple-expansion marine engine."

A twin-screw steamer 366 feet long will be built by the Bath Iron Works, Bath, Me., for the Norwich line. The contract was closed only a few days ago. The machinery will be of 4,000 horse power and the boat will cost \$430,000.

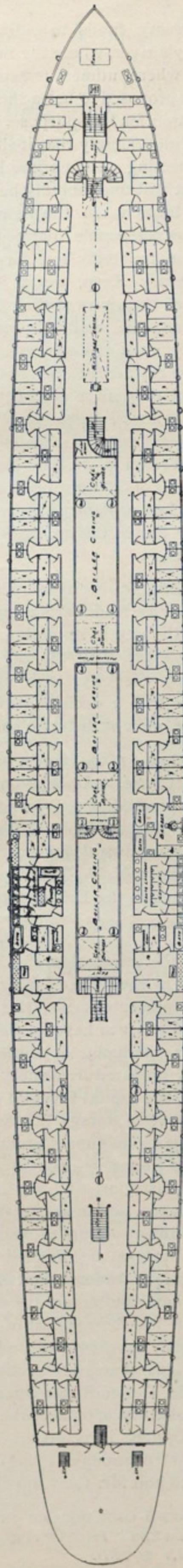
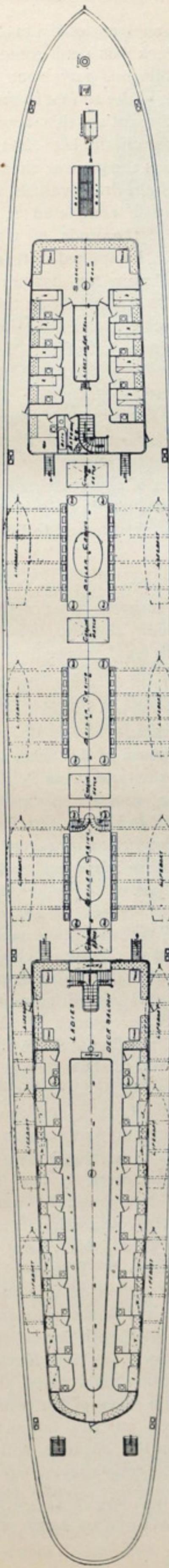
The contract of F. W. Wheeler & Co., West Bay City, Mich., with the government for a new lightship, specified that the vessel should be delivered Dec. 16 on her station. At 9 o'clock on the date named the vessel was turned over to the government. This is worthy of note as a strict adherence to the letter of the contract.—The Engineer, New York.

A book just from the government presses shows that there were 12,868,683 tons of coal mined in the state of Ohio during the year 1891. The spot value was less than \$1 a ton, being \$12,106,115. Twenty-nine counties in the state produce coal. Twenty-two thousand one hundred and eighty-two men are engaged in digging it.

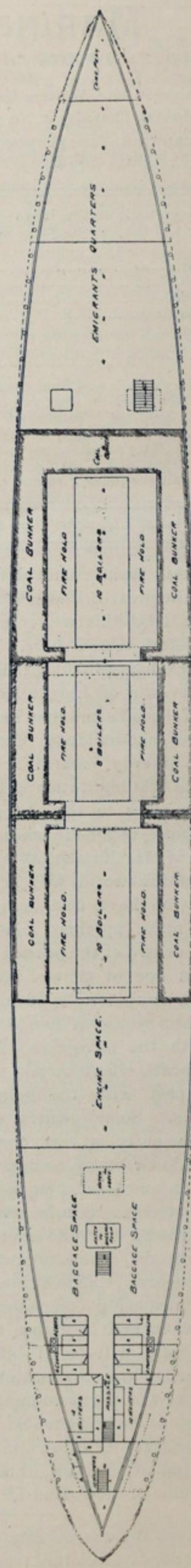
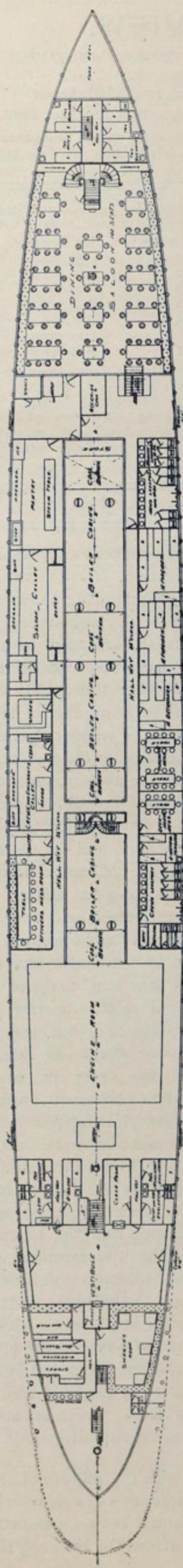
The American Shipbuilder announces that Herbert Appleton of Brooklyn, N. Y., James F. Cox of Morristown, N. J., and N. B. Woodworth of Orange, N. J., have organized the New York Shipbuilding and Engine Company, with a capital of \$500,000, for the purpose of constructing steam vessels and marine engines.

Great Northern Twin-Screw Passenger Steamers—Deck Plans.

BUILDING BY GLOBE IRON WORKS COMPANY, CLEVELAND, FOR SERVICE BETWEEN DULUTH AND BUFFALO.



HURRICANE DECK AND SPAR DECK PLANS.



MAIN DECK AND LOWER DECK PLANS.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

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Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—\$2.00 per year in advance. Single copies 10 cents each. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 228 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014. Number of boats through St. Mary's Falls canal in 1891, 225 days of navigation, 10,191; tonnage, net registered, 8,400,685. Number of boats through Suez canal during 1891, full year, 4,207; tonnage, net registered, 8,698,777.

Entered at Cleveland Post Office as Second-class Mail Matter.

IT HAS been rumored for some time past that a representative of the great British insurance institution, Lloyds, would visit the lakes this winter, with a view to extending classification to steel vessels here. It is now officially announced in English exchanges that Mr. Harry J. Cornish, assistant to the chief surveyor of Lloyds Register, will make this visit shortly and will spend some time in investigating very thoroughly the practice of lake builders. Considering the large number of lake steamers already insured at Lloyds, it is a wonder that the officials of that institution in charge of the register did not long ago take steps in this direction. With the appointment of a Lloyds surveyor for the lakes, which will very probably follow the visit of Mr. Cornish, all of the standard classification associations of the world will be represented here, and the underwriters who have been doing business under old methods may as well make up their minds that it is only a matter of a season or two at the outside when all steel vessels will have a rating in one or more of these registers, and their owners will be taking insurance abroad, unless the home companies can so adjust their system of doing business that they can compete in rates with the foreigners. This does not refer, of course, to wooden boats, whose owners will be compelled to do business as in the past with the general and local agents of home companies. Some owners of steel vessels may be compelled to make a few changes in their boats in order to secure low rates of insurance through the classification here referred to, and some new features of strength may be introduced in steel vessels to be constructed in the future, but owners of these vessels will find no trouble in getting insurance, and this is why they show no interest in the plans for a revised Inland Lloyds. Unless expressions of opinion from the officers of steel steamship companies is misleading, the meetings of vessel owners and insurance agents held in Detroit and Cleveland recently will be of little assistance to the home underwriters in holding the business of risks on steel boats. The steel boat owners will in most cases refuse to pay for the proposed inspection, and the loss of 1½ cents a ton from the bulk of this tonnage will cause a marked reduction in the fund which it is expected to raise from inspection fees. There are still grave doubts of the Inland Lloyds being re-organized.

UNLESS the war department differs with the officers of the Lake Carriers' Association regarding the intention of congress in making the appropriation for a 20-foot channel between Duluth, Chicago and Buffalo, a means has been provided for securing the

necessary funds to widen the channel at "collision bend," St. Mary's river, where the Susan E. Peck was sunk some time ago and where numerous expensive collisions have since occurred. It is proposed to use a small portion of the 20-foot channel appropriation for this purpose. The act granting this appropriation provides simply that it shall be used on the big channel in the connecting waters of the lakes, and as the present channel at this point will undoubtedly be used by light-draft vessels bound up the lakes when the new waterway is completed, it certainly seems reasonable that a small part of the funds, of which there will undoubtedly be a surplus, should be applied to this purpose. Secretary Keep, who is now in Washington, has already submitted the views of the officers of the association on this subject to Gen. Poe, and will bring the matter to the attention of Gen. Casey, chief of engineers. The main object of Mr. Keep's visit to the capital is to be in attendance to-day (Thursday) at a meeting of the senate committee on commerce, at which arguments will be heard upon the Harter bill relating to contracts of common carriers of merchandise between ports of the United States and foreign ports, making it unlawful to insert any contract in any bill of lading relieving the owner of any vessel from liability from loss or damage in transportation. This bill, which has already passed the house, is especially detrimental to line boat interests.

CHICAGO's city council decided some time ago to demand a license fee from harbor tugs. The supreme court of Illinois upheld the city in its action but William Harmon, who was the representative of the tug owners in legal proceedings brought against the city, took his case to the United States supreme court, and a decision from the highest authority now reverses the opinion of the state court.

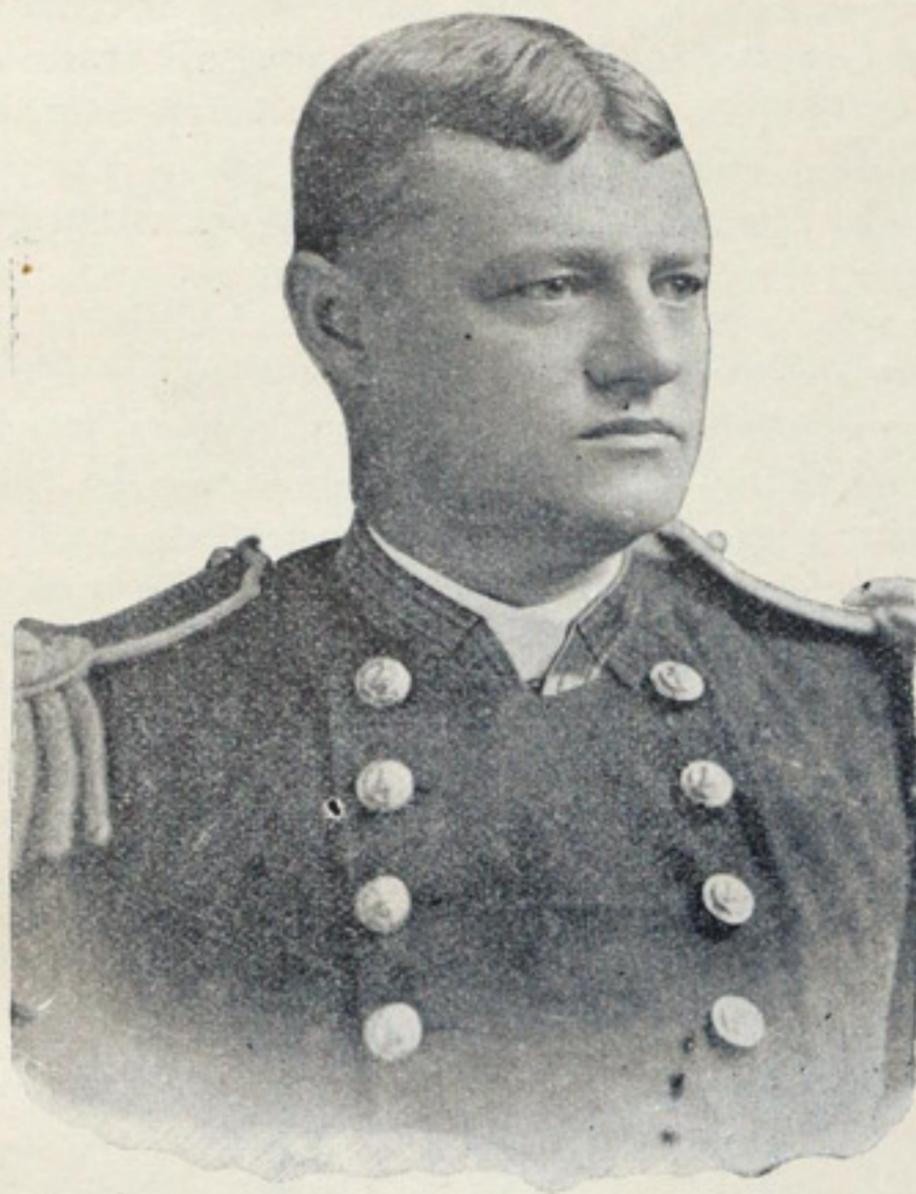
ONE OF the largest bills of expense in the accounts of the Lake Carriers' Association during the past year is charged to legal proceedings against four union sailors who "pulled" the crew of the Mable Wilson at Buffalo. The association was finally successful, however, in the conviction of two of the men at Albany, N. Y., Tuesday. They were fined and will be imprisoned in the Erie county (N. Y.) jail.

Lake Fisheries.

By the resignation of J. W. Collins of Maine, there is a vacancy in the office of assistant United States fish commissioner, and representatives of this industry on Lake Erie are making a united effort to have an Ohio man, State Senator W. C. Gear of Upper Sandusky appointed to the position. Some figures recently prepared by dealers in Cleveland to show that in this city alone, the capital invested in nets, tackle, and other equipment, exclusive of storage houses, is about \$200,000, and the value of the aggregate annual products for three or four seasons past has ranged from \$250,000 to \$300,000. The aggregate investment in the industry at all Lake Erie ports is certainly not less than \$2,000,000, and in asking that Ohio be represented among the government officers connected with the commission, it is desired that attention be directed to these facts. Mr. Gear has the unanimous endorsement of the dealers of Toledo, Sandusky, Cleveland, and in fact the entire lake region, as it is understood that he has the support of fifteen United States senators, all of the Ohio congressmen and members of both branches of the Ohio legislature, irrespective of politics. As Hon. Marshall McDonald, United States commissioner, has held office under two administrations on account of the high order of the work of the commission, it is generally expected on the lakes that the recommendations of those engaged in the business will be considered and Mr. Gear appointed to the assistantcy.

SEND ONE DOLLAR IN STAMPS TO THE MARINE REVIEW FOR TWENTY PHOTOTYPES AND GRAVURES OF LAKE STEAMERS NEATLY BOUND.

Commander Robley D. Evans, U. S. Navy.



The naval secretary of the United States light-house board is an officer whose duties bring him very close to the shipping interests of the country. By intelligent co-operation with vessel owners, this officer, who is most actively engaged in the executive affairs of the light-house institution, can readily command the support of the large interests represented in the merchant marine. Commander Robley D. Evans, who recently succeeded Commander George W. Coffin to this position, is spoken of as an officer well qualified to meet such requirements. He was appointed to the Naval Academy from Utah in 1860, served through the war and was severely wounded in the assault and capture of Fort Fisher, and promoted by act of congress for that engagement. In service outside of the department since the war Commander Evans has had charge of some very large works, and has held several important charges with the department in the construction of the new navy. In 1891 he was ordered to command the Yorktown and proceeded in her to Valparaiso, Chili, remaining there until ordered north. In May, 1892, he was ordered to command the Behring sea fleet to stop poaching in those waters, and upon his return was assigned to the position which he now occupies.

Around the Lakes.

At the Sites' mill, Warren, O., there was turned out recently a piece of ship timber 60 feet long and 30 inches square at each end.

A projected enlargement of the Manitowoc Boiler Works will result in a shop 54 by 116 feet. A 10-ton traveling crane will be included in the new equipment.

A steel yacht 101 feet long and costing about \$50,000 is to be built by the Hamilton Bridge and Tool Company of Hamilton, Ont., for Alfred E. Gooderham of Toronto.

Capt. R. Fitzgerald and F. Chapman of Ogdensburg, and M. J. Galvin of Buffalo, are figuring with Detroit parties for the purchase of a freight steamer to run as a "tramp" between Chicago and Ogdensburg.

Citizens of Ashtabula are talking of a dry dock at that port. In future dry docks will be located only where there is close at hand a plant for repairing steel vessels, and in this regard Ashtabula, as well as many other small lake ports, is at a great disadvantage.

It has been reported that the steamer Centurian, the fourth big steel boat upon which work was begun recently at the ship yard of F. W. Wheeler & Co., West Bay City, was sold to the owners of the Gilbert, and it was also said that the owners of the Emily P. Weed had purchased the boat. Mr. Wheeler pronounces both stories untrue. The boat is being constructed on builders' account. The steel steamer building at this yard for

Capt. John Mitchell and others of Cleveland may be chartered for package freight business through Duluth parties, with whom negotiations have been going on for some time past. This boat will be launched within the coming month.

W. A. Sproul of Philadelphia and George T. Bishop of Cleveland visited Sault Ste. Marie last week, in company with Capt. Charles M. Swartwood, and looked over sites for the proposed dry dock. A meeting of parties interested in the formation of a company to take up this enterprise will be held shortly and a proposition made to the people of the Sault.

When the Detroit Dry Dock Company alters its old dock at the Orleans street plant, it is proposed to secure in the new construction a dock 250 feet in the clear, 79 feet wide at the top and 44 feet wide at the bilge with 12 feet of water over the blocks. Otherwise the new dock will be built on the plan of the big dock, with a pontoon gate and all the appliances for quickly filling and emptying.

A large tug to be built at Milwaukee during the summer will be engined by the Sheriffs Manufacturing Company, the machinery to be a duplicate of that in the steamer A. E. Shores, Jr., which is a fore-and-aft compound embracing the triple-expansion principle, the intermediate cylinder being omitted. The engine of the Shores has cylinders of 16 and 43 inches diameter, with 30 inches stroke, and can be turned up to 130 revolutions per minute. To furnish steam there will be a boiler embracing the water-tube and Scotch types, capable of furnishing a working pressure of 160 pounds. The engine is to be provided with a surface condenser and all modern appliances.

J. W. Powers of Sycamore, Ill., is having built at Rockford a new-style triple-expansion engine. The three cylinders are arranged in triangular form at equal distance apart. They are provided with a compound piston head, which does away with the steam chest and eccentric in use in the ordinary steam engine, each piston head performing the work of cut-off and plunger. The pistons are attached to a common crank head. There are no valves in its construction. When the piston of one of the cylinders is changing the direction of its passage the other two are both at work and no power is lost. It is claimed that the engine can make 1,000 revolutions per minute. Mr. Powers has been at work on this novel piece of mechanism twelve years, and has secured patents on it in nearly every country in the world. He will exhibit the engine at the world's fair.—Exchange.

Personal Mention.

Mr. H. M. Hanna of Cleveland is accompanied on his trip south in the yacht Comanche by John F. Pankhurst, E. C. Pechin and Charles Chapin.

J. Jenks, the former partner in the lumber business of George W. Pack and John L. Woods, Cleveland, died at Sand Beach, Mich., aged eighty-two years.

Prof. R. H. Thurston of Cornell University has been made a member of the Advisory Council of Engineering and Marine Architecture, World's Columbian Exposition.

Mr. W. D. Kearnott, from Philadelphia, has opened an office at No. 54 Frankfort street, Cleveland, and will hereafter look after the lake business of Henry R. Worthington, New York.

A. L. Evans, formerly general agent of the Lake Shore Transit Company at St. Paul, has been appointed general agent of the Western Transit Company, with headquarters at Minneapolis.

Mr. Henry Beatty, manager of the Canadian Pacific Railway steamers, running between Owen Sound and Port Arthur, has resigned, and will be succeeded by Mr. Peres, formerly private secretary to President Van Horne.

Commander John J. Reed, U. S. N., inspector of the eleventh light-house district with headquarters in Detroit, has been promoted to a captaincy by the light-house board examining committee. Commander E. T. Woodward, of the ninth district, Buffalo, stood next to Commander Reed but failed in the physical test. At the end of six months Commander Woodward will be examined again and will be placed on the retired list if he fails then to qualify physically.

Mr. Smith, deputy minister of marine of Canada, gives notice that the back range light tower at Corunna, St. Clair river, burnt down in June last, has been replaced by an enclosed wooden tower, square in plan, painted white, 42 feet high from the ground to the top of the lantern. The new tower stands on the site of the old one.

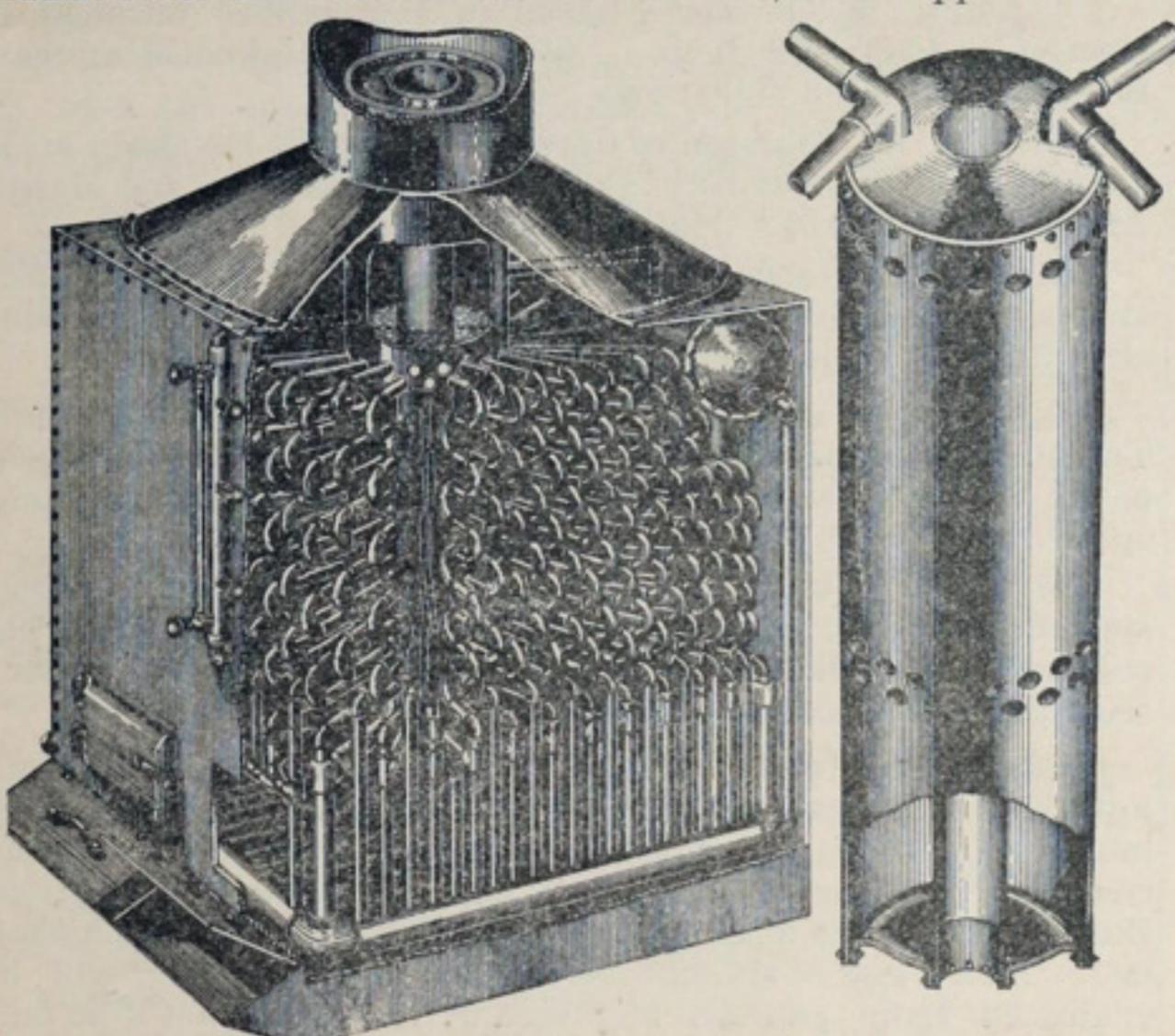
Coller Patent Safety Sectional Water Tube Boiler.

Cuts shown on this page fully illustrate the appearance in general of the Coller boiler, which has already attained a reputation, having an advantage over other boilers of its class by reason of the steam and water dome standing perpendicular in the center of the boiler, instead of horizontal, whereby the rolling of a yacht in no case can cause water to be drawn over into the engine, thereby avoiding all centrifugal separators or super-heaters. With engine wide open there is no fluctuation of water, as in this boiler it can be readily seen that the water is in the bottom instead of the top, and as the main 20 inch central dome, $6\frac{1}{2}$ feet long, is two-thirds full of water, the amount therein contained is nearly equal to that of the old style shell boilers of the same horse power. The main steam dome is a constant feeder through the four large pipes at the bottom of the dome to the base of the boiler for all the upright smaller sections.

One secret of the Coller boiler making steam rapidly is the very equal distribution of heat around the upright sections. The outer side of the pipes are so arranged that there is nearly double the area for draught that there is in the center near the large drum, and consequently the heat takes a straight shoot up instead of going direct to center flue, or through center of boiler. By this arrangement over 25 per cent. of fuel is saved. This boiler is well adapted for all purposes and more practically for marine work, where light weight, quick steaming, positive security against priming and high pressure are required, as from 200 to 300 pounds can be carried if desired. It is no trouble to get steam in four minutes after lighting the fire.

Eighteen inches above the grate is the main steam and water drum, which is provided with a central flue passing vertically therethrough, and affording a passage for the caloric current through the drum. Communicating with the hollow base through the couplings at the corners, are the large vertical pipes that connect with the lower end of the drum through the horizontal pipes that extend radially from said drum.

There is a series of straight vertical pipes that communicate at their lower ends with the base and extend entirely around the fire space. The upper ends of these pipes are coupled by means of the elbows to the sinuous pipes provided with return bends, which cause the pipes to traverse the fire space diametrically in radial order and stand in vertical columns, their upper ends be-



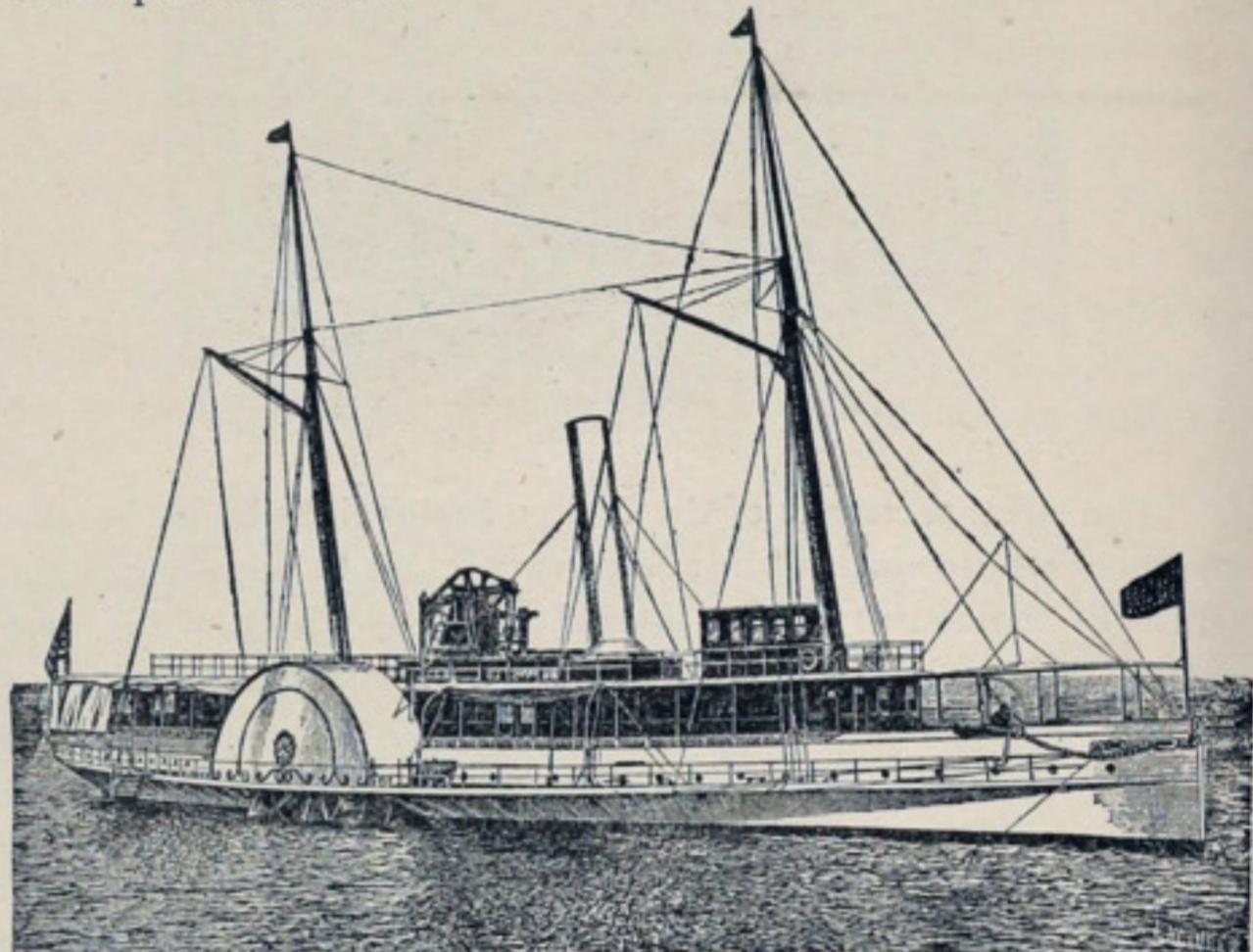
ing expanded in the drum, with the interior of which the pipes communicate; the lower end of each alternate pipe being connected with the base of the drum through the horizontal radial pipes.

Among the features of this style of boiler are the following: Absolute safety from disastrous explosion, fuel economy, thor-

ough circulation, quick steaming and plenty of steam, steady water line, no cleaning of flues, water space or removal of hand-hole plates, perfect combustion, high pressure that can be safely carried, small space and light weight, allowance for contraction and expansion, and accessibility of all parts. For prices apply to the Coller Steam Yacht and Engine Works, Detroit, Mich.

A Side-Wheel Steam Yacht.

There are many owners and masters of vessels, practical men, who would for many reasons build a side-wheel yacht upon considering mainly the question of comfort. To these, the accompanying engraving of the side-wheel steam yacht Clermont will prove interesting, although this type of boat is, of course, not without its disadvantages if it is desired to use it for other than special service.



SIDE-WHEEL STEAM YACHT CLERMONT.

The Clermont has a wooden hull 160 feet 3 inches long over all, 150 feet 6 inches on load line, 25 feet molded beam, 43 feet over guards, 10 feet 8 inches deep and 5 feet 3 inches draft. The engine, which was built by the W. & A. Fletcher Company, New York, is of the beam type, with cylinder 40 inches in diameter and 6 feet stroke. The wheels are of the feathering pattern, 17 feet in diameter and 6 feet 6 inches face. There is one steel return-flue boiler, 8 feet 1 inch in diameter and 26 feet long; the usual working pressure 60 pounds. There is also a donkey boiler carrying 125 pounds steam, a steam windlass and other fittings. The boat is lighted by electricity, the dynamo being driven by an engine with 5x6-inch cylinder. The actual speed of the Clermont in dead water is 18 miles an hour with 46 revolutions per minute. At this speed the engine develops about 800 horse power. She was built for cruising and not for speed. The Clermont is handsomely fitted up and has plenty of accommodations for passengers and crew. The engraving was originally printed in the Engineer of New York.

Grain Stocks Still Increasing.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principal points of accumulation on the lakes on Jan. 21, 1893:

	Wheat, bu.	Corn, bu.
Chicago.....	13,322,000	5,639,000
Duluth.....	15,695,000	266,000
Milwaukee.....	2,324,000	26,000
Detroit.....	1,774,000	15,000
Toledo.....	3,600,000	1,408,000
Buffalo.....	3,650,000	111,000
 Total.....	40,365,000	7,465,000

The steam barge Lothair burned to the water edge a few days ago in her winter quarters at Windsor.

Serve's Ribbed Steel Boiler Tubes.

Mr. Charles W. Whitney of 81 and 83 Fulton street, New York, agent in this country for Serve's ribbed steel boiler tubes, has just taken an order for 1,840 tubes, $3\frac{1}{2}$ inches diameter by 10 feet $3\frac{1}{2}$ inches long for the new Fall River steamer, which is to eclipse in size, speed and in the elegance of her appointments any steamer of her kind hitherto built in this or any other country. The engines and boilers are being built by the W. & A. Fletcher Company of Hoboken, N. J., and the order is from this firm. The steamer is to have ten boilers of the Scotch marine type, 14 feet in diameter and $14\frac{1}{2}$ feet long, each boiler to be fitted with 184 of these tubes. With plain tubes the consumption of fuel by this steamer was estimated at 160 tons per round trip between New York and Fall River, and the saving in fuel or increased steaming capacity by the use of ribbed tubes is estimated to be at least 10 per cent. Under favorable conditions it is claimed that it will amount to more than this. Mr. Whitney says: "At the present cost of anthracite coal in New York, \$4.30 per ton in the bunkers, the ribbed tubes on this estimate

will pay for themselves outright in two years' service, and then go right along and make half their cost every year for the owners of the boat during the balance of their lives, which we estimate at five years, the total life of the tube under usual conditions in marine boilers averaging seven years.

Naval engineers speak favorably of the Ward boilers, which were placed in the Monterey, U. S. N., by the navy department partly in the way of an experiment. They have never been used before on so large a scale, and there has been some doubt as to the probability of their proving successful. But the engineers state that the boilers steam perfectly and give every indication of continuing to do so with increased pressure.—The Engineer, New York.

The firm of W. W. Lawrence & Co., Pittsburg, recently filled an order for the United States government for nearly 10,000 gallons of paint, which is to be used on the light-houses and government buildings on the Atlantic coast.

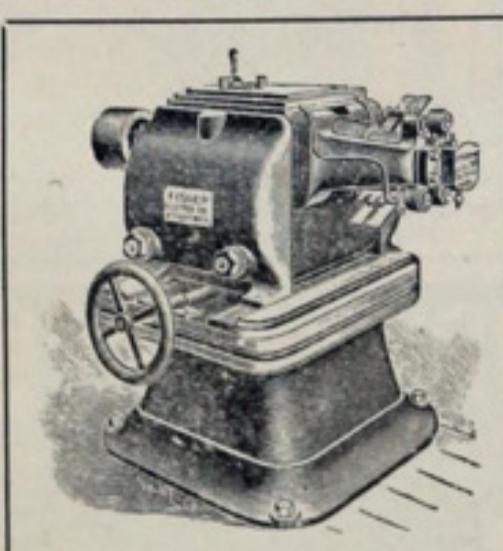
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AUTOMATIC INCANDESCENT LIGHTING PLANT,

Which can be handled by an engineer without any previous knowledge of electric plants, and which will operate arc and incandescent lamps from the same dynamo, write the

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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind or wishing to purchase vessels, are invited to take advantage of the same offer. Employers in need of professional men or men who want positions may avail themselves of the opportunities offered. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 516 Perry-Payne Building, Cleveland, O.

162—FOR SALE CHEAP—Steam launch, 25 feet long, 5½ feet beam. Porcupine boiler and oil for fuel. In very good condition. Boat cost \$750; nearly new; will sell for \$300.

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166—FOR SALE—Twin screw steel hull steamer, 120 feet long and 18 feet wide; draft, 4½ feet; speed, 18 miles.

167—FOR SALE—Steamer Rust and Schooner Barnes, having 6-cent wheat on board.

168—FOR SALE—Dredge and two dump scows.

169—FOR SALE—Pair 6½x14 dredge engines.

170—FOR SALE—A new steel hull steam yacht, 56 feet over all and 10 feet beam; good speed.

171—FOR SALE CHEAP—Engine, marine compound, 6 and 12 by 8; used only two months. Price \$310.

172—FOR SALE CHEAP—Boiler, water tube, nearly new, 50 in. by 60 in. by 6 ft. high; allowed 200 pounds steam. Price \$400 if sold at once.

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Steamer David W. Rust, laid up at Duluth with 33,800 bushels of wheat on board, drawing 13 feet 7 inches of water; freight and storage to Buffalo 6 cents.

Schooner C. C. Barnes, also laid up at Duluth with 33,300 bushels of wheat on board, drawing 13 feet 7 inches of water; freight and storage to Buffalo 6 cents.

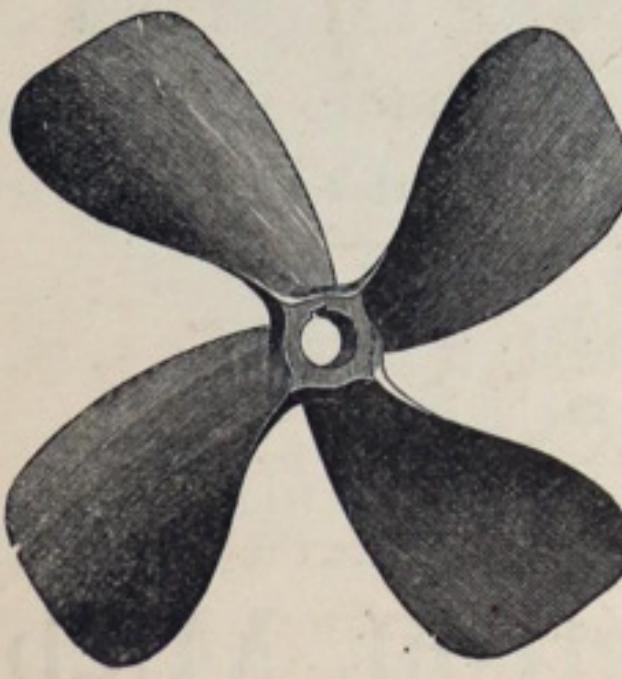
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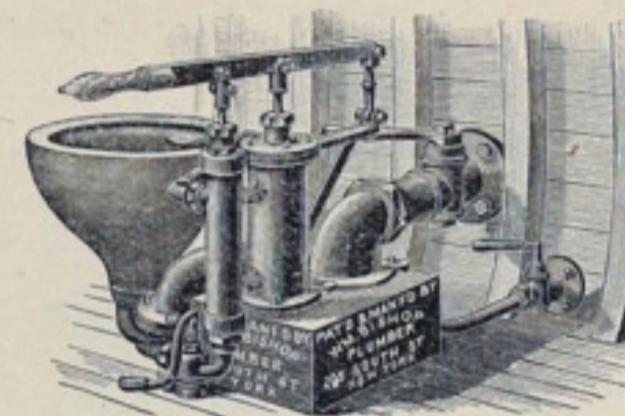
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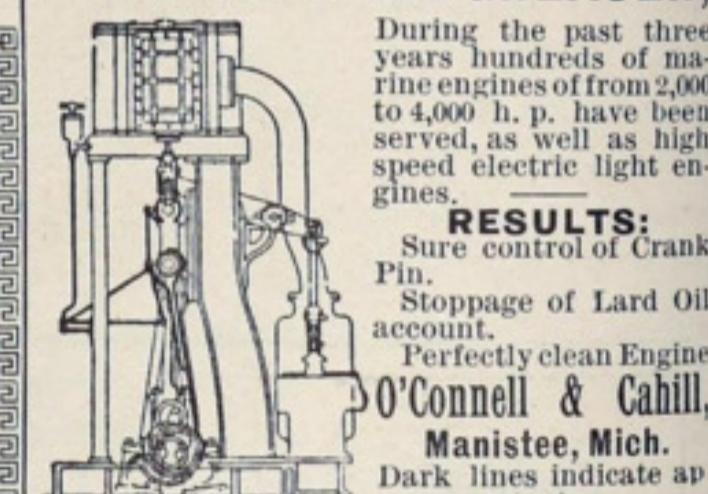
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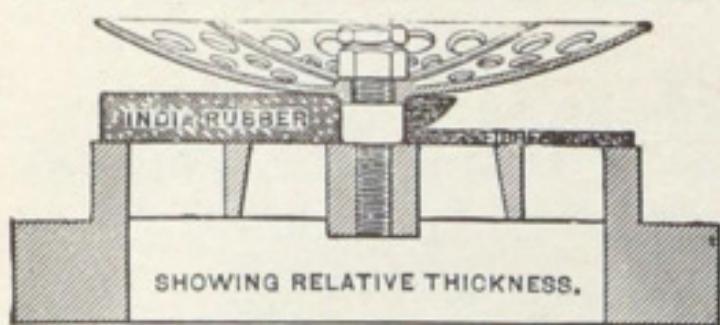
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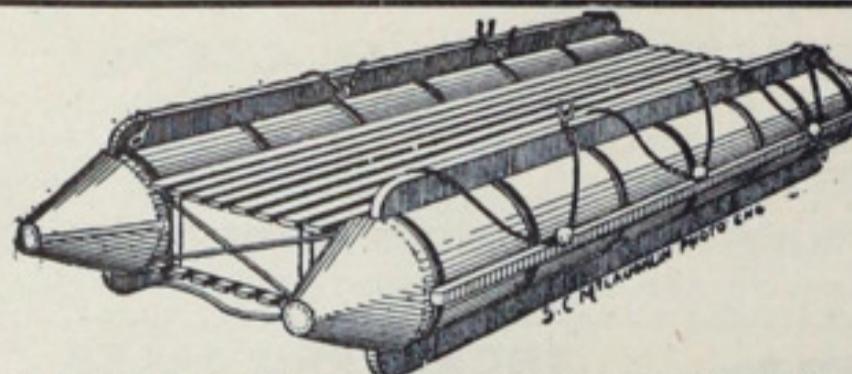
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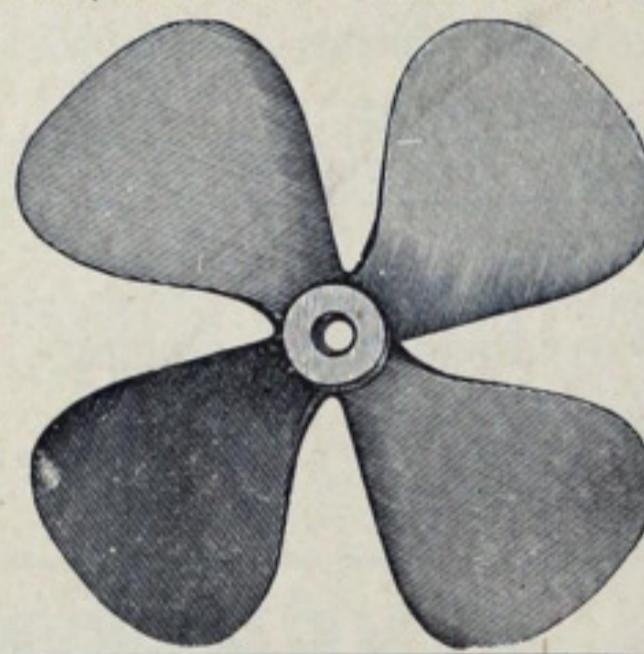
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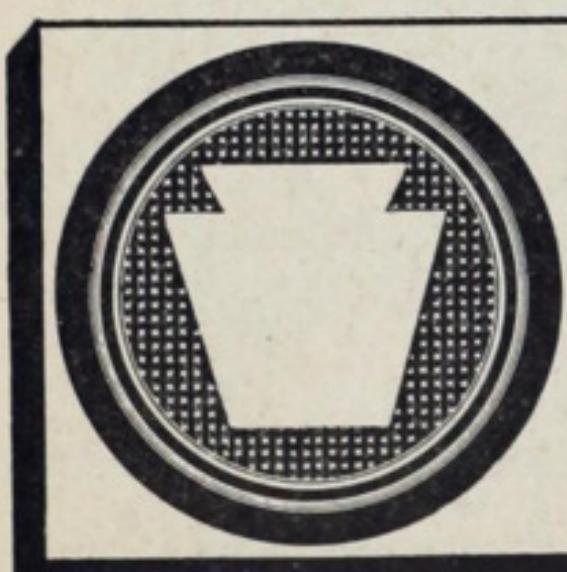
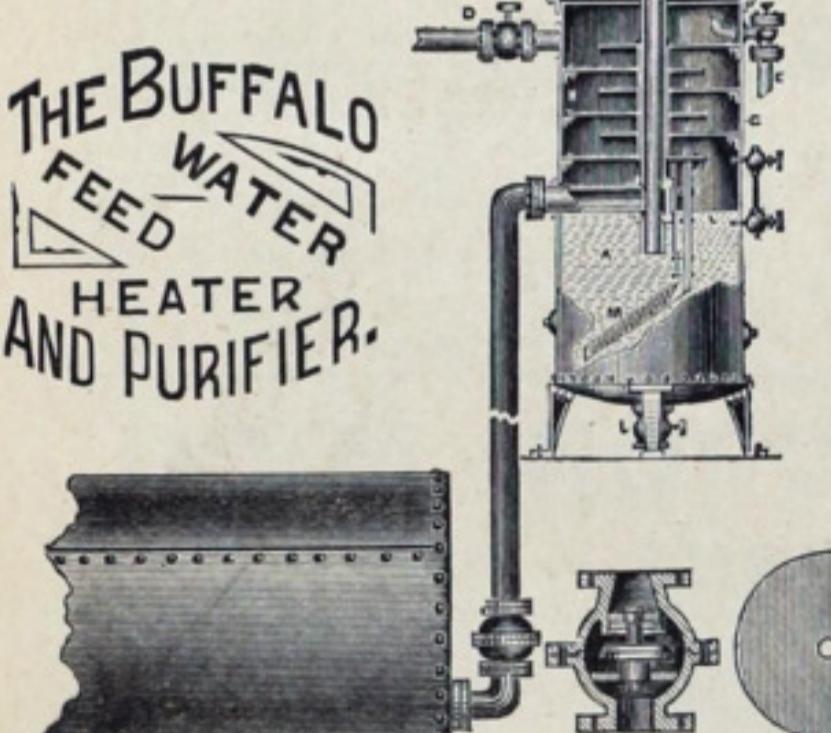
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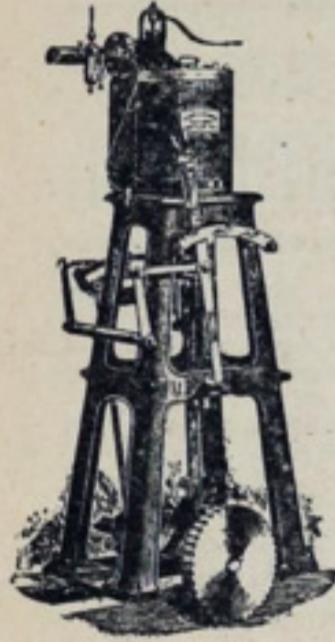
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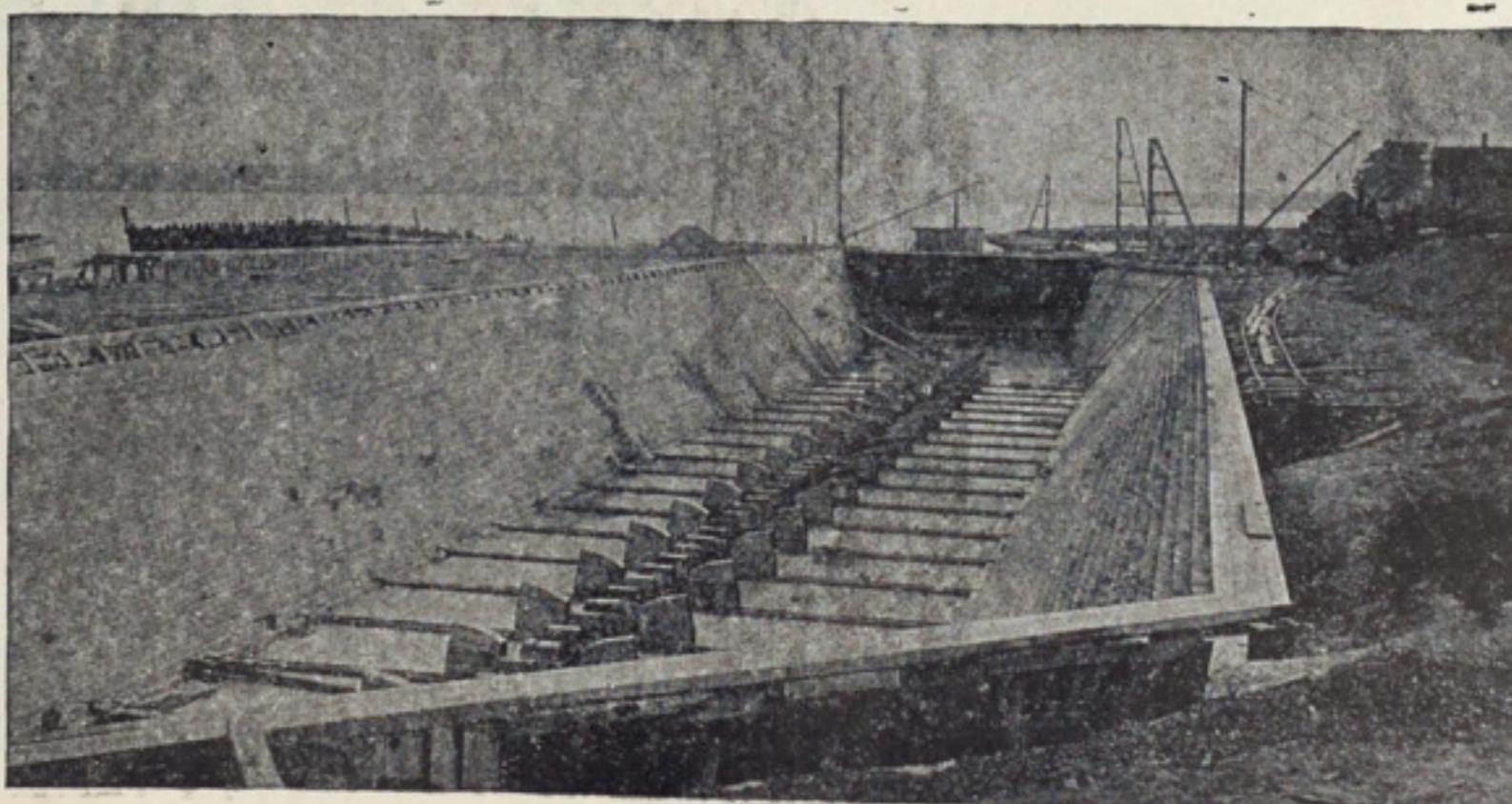
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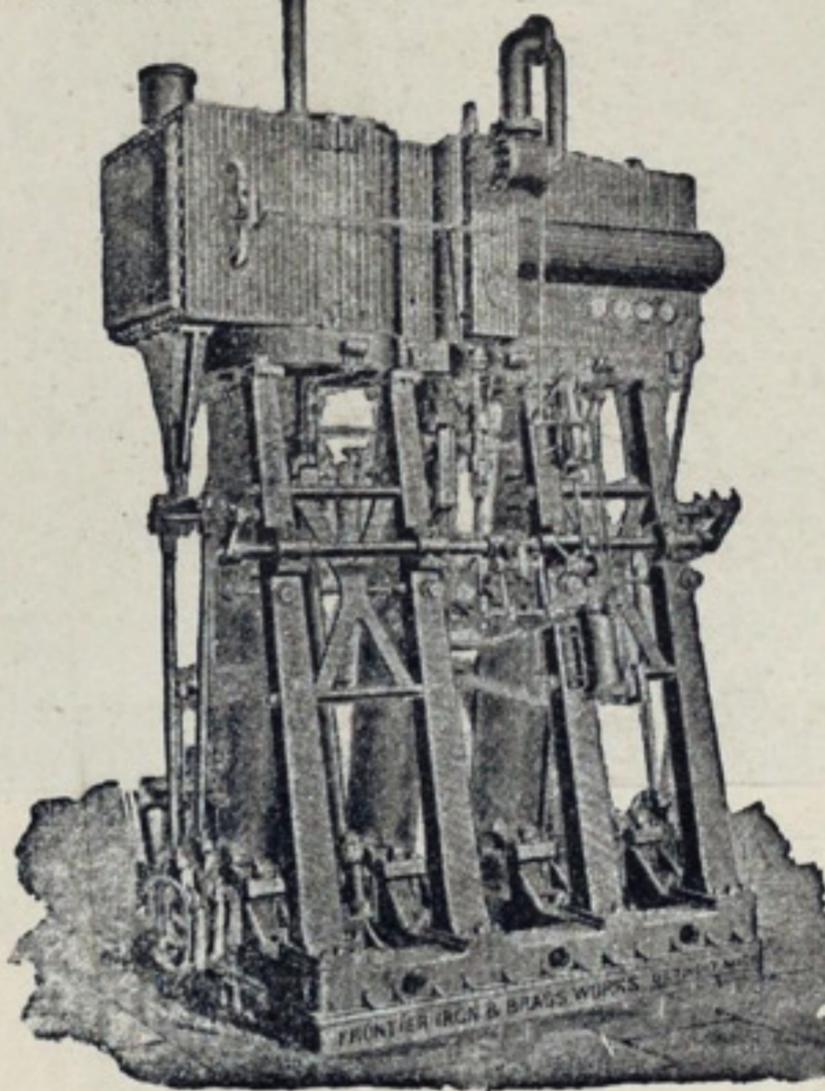
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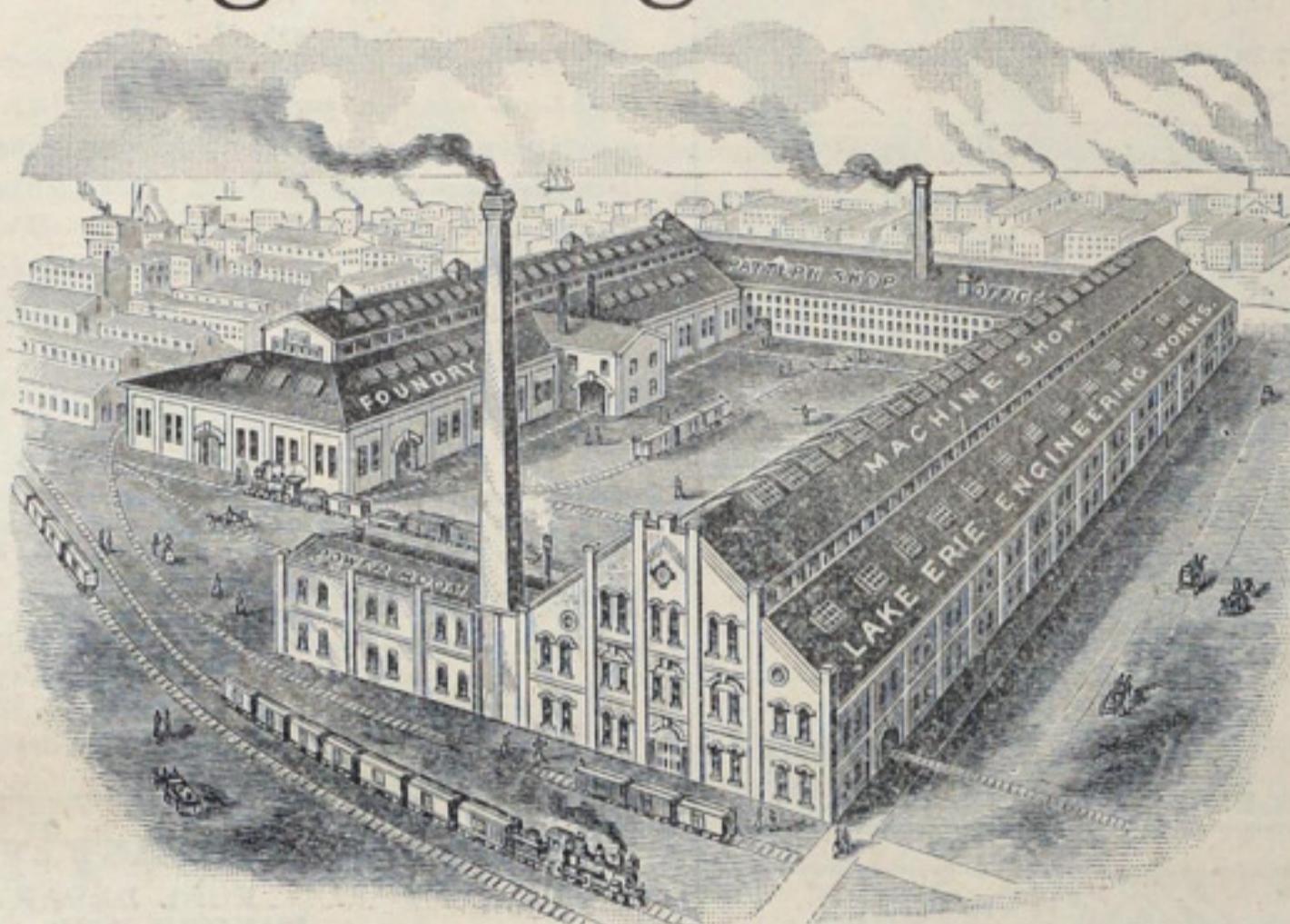
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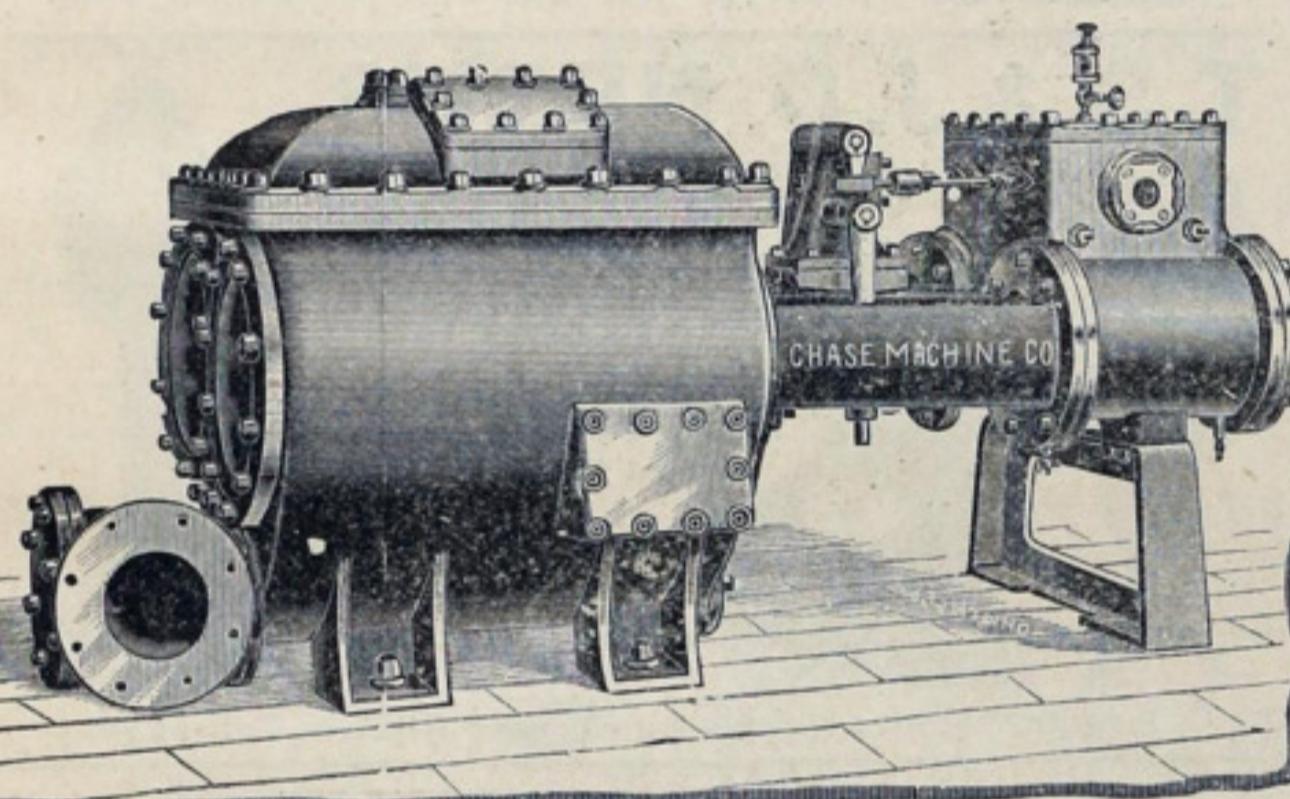
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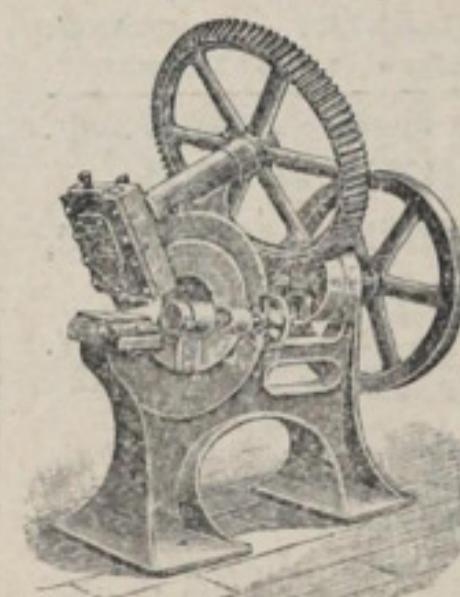
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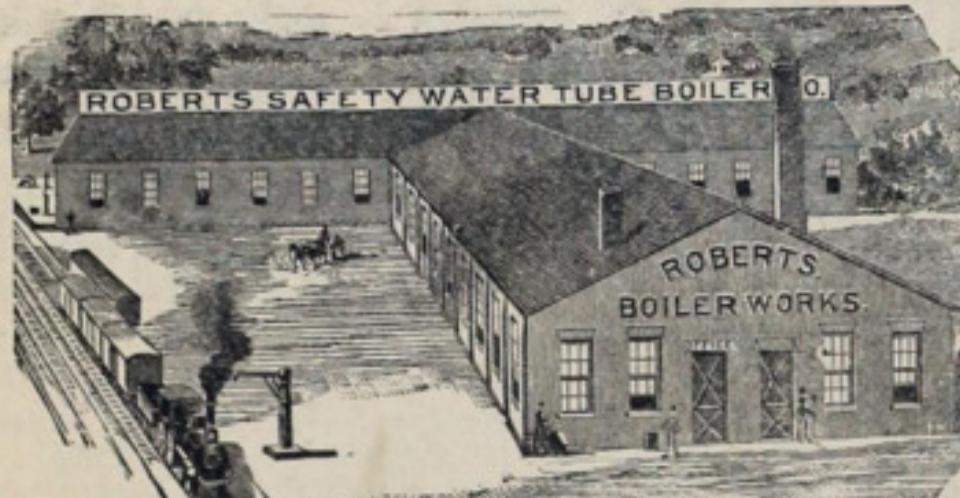
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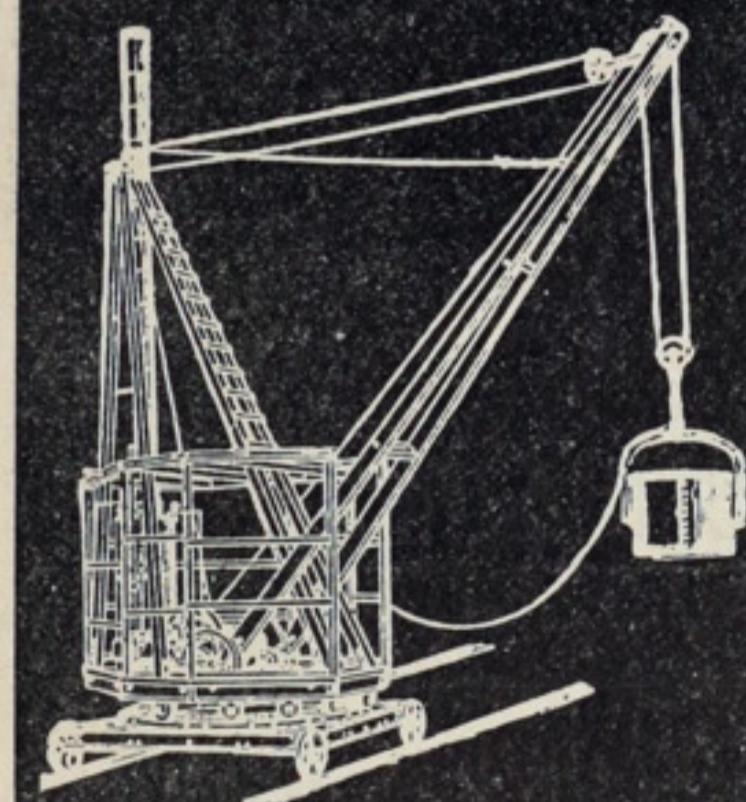
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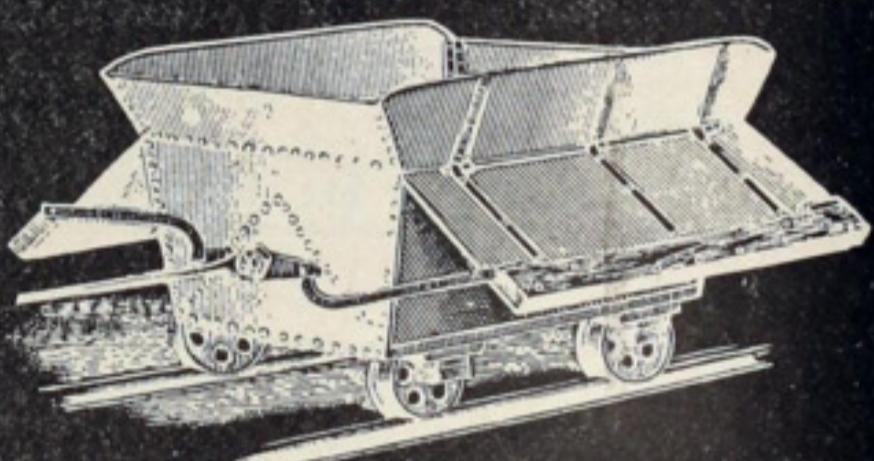


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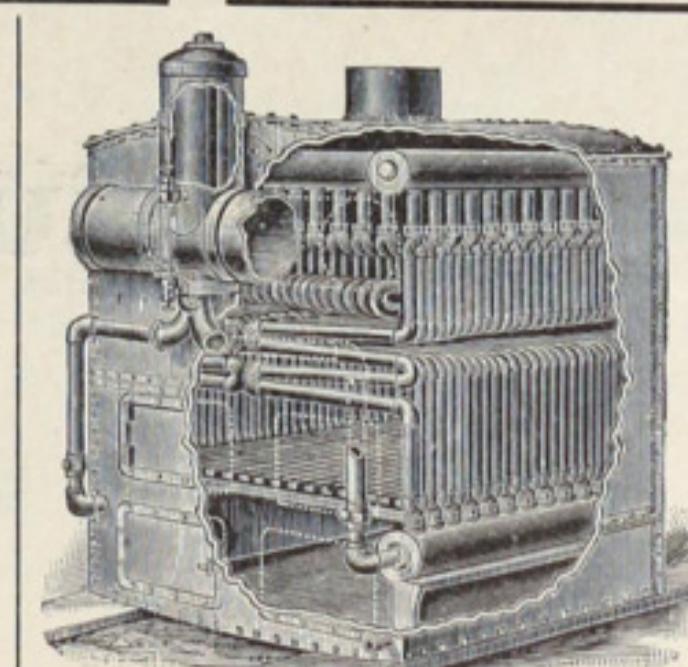
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